MILITARY SPECIFICATION

SEMICONDUCTOR DEVICE, TRANSISTOR, NPN, SILICON, HIGH-POWER
TYPES JAN2N2812, JANTX2N2812, JAN2N2814 AND JANTX2N2814

This amendment forms a part of Military Specification
MIL-S-19500/415(USAF), dated 10 July 1969.

Page 1

*TITLE: Delete and substitute the following:

"SEMICONDUCTOR DEVICE, TRANSISTOR, NPN, SILICON, HIGH-POWER
TYPES 2N2812 AND 2N2814 NON-TX, TX, AND TXV"

*1.1: Delete and substitute:

"1.1 Scope. This specification covers the detail requirements for NPN, silicon, high-power transistors. The prefix 'TX' is used on devices submitted to and passing the special process-conditioning, testing, and screening as specified in 4.5. The prefix 'TXV' is used on devices submitted to and passing the internal visual inspection specified in 4.6."

1.4, Switching time max limit for t_{on}: Delete "350" and substitute "400"; switching time max limit for t_f: Delete "200" and substitute "400".

Page 2

*Add the following new paragraphs:

"3.4.2 Internal visual (PRECAP) inspection and process-conditioning, testing, and screening of 'TXV' types. The 'TXV' device type shall, in addition to all performance requirements, be internally visually inspected and process-conditioned, tested, and screened in accordance with 4.6."

"3.5.2 'TXV' marking. Devices in accordance with the 'TXV' requirements shall be marked with 'TXV' immediately following the JAN prefix."

*4.2.1: Delete and substitute:

"4.2.1 Qualification testing. The non-TX types shall be used for qualification testing. Upon request to the qualifying activity, qualification will be extended to include the 'TX' and 'TXV' types of the device."

Page 6

Table I, Group A inspection, Subgroup 4, Turn-on time max limits column: Delete "350" and substitute "400"; Fall time max limit column: Delete "200" and substitute "400".

Page 9

Table II, Group B inspection (Continued), Subgroup 5: Under Details column, delete and substitute the following:

Load Cond. C: T_C = 25°C (see Figure 3b, herein), Duty Cycle ≤ 2%

Test 1: t_p = 7.82 μs (vary to obtain IC)
$t_r = t_f \leq 500$ ns
R_{BB1} = 5 Ω
V_{BB1} = 13 Vdc
R_{BB2} = ∞
V_{BB2} = 0
V_{CC} = 22.5 Vdc
I_C = 8 Adc
L = 15 μH, ≤ 1 Ω

Test 2: t_p = 25 μs (vary to obtain IC)
$t_r = t_f \leq 500$ ns
R_{BB1} = 5 Ω
V_{BB1} = 13 Vdc
R_{BB2} = ∞
V_{BB2} = 0
V_{CC} = 22.5 Vdc
I_C = 2.54 Adc
L = 150 μH, ≤ 10 Ω

Page 13

Figure 3b. Switching: Unclamped inductive load. Delete and substitute the attached Figure 3b.

Page 16

*Add the following new paragraph:

"4.6 Internal visual (PRECAP) inspection and process-conditioning, testing, and screening of 'TXV' types. The internal visual inspection shall be performed in accordance with test method 2072 of MIL-STD-750 prior to encapsulation on a 100 percent basis and process-conditioning, testing, and screening shall be as specified in 4.5. The manufacturer shall permit the authorized Government representative to witness concurrent with time of manufacturer's performance of these tests, the process-conditioning, testing, and screening of the devices. Those conditioning and screening tests normally performed by a manufacturer as standard production tests, need not be repeated when these are predesignated and acceptable to the Government as being equal to or more severe than the test specified herein."

1/ The margins of this amendment are marked with an asterisk to indicate where changes from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

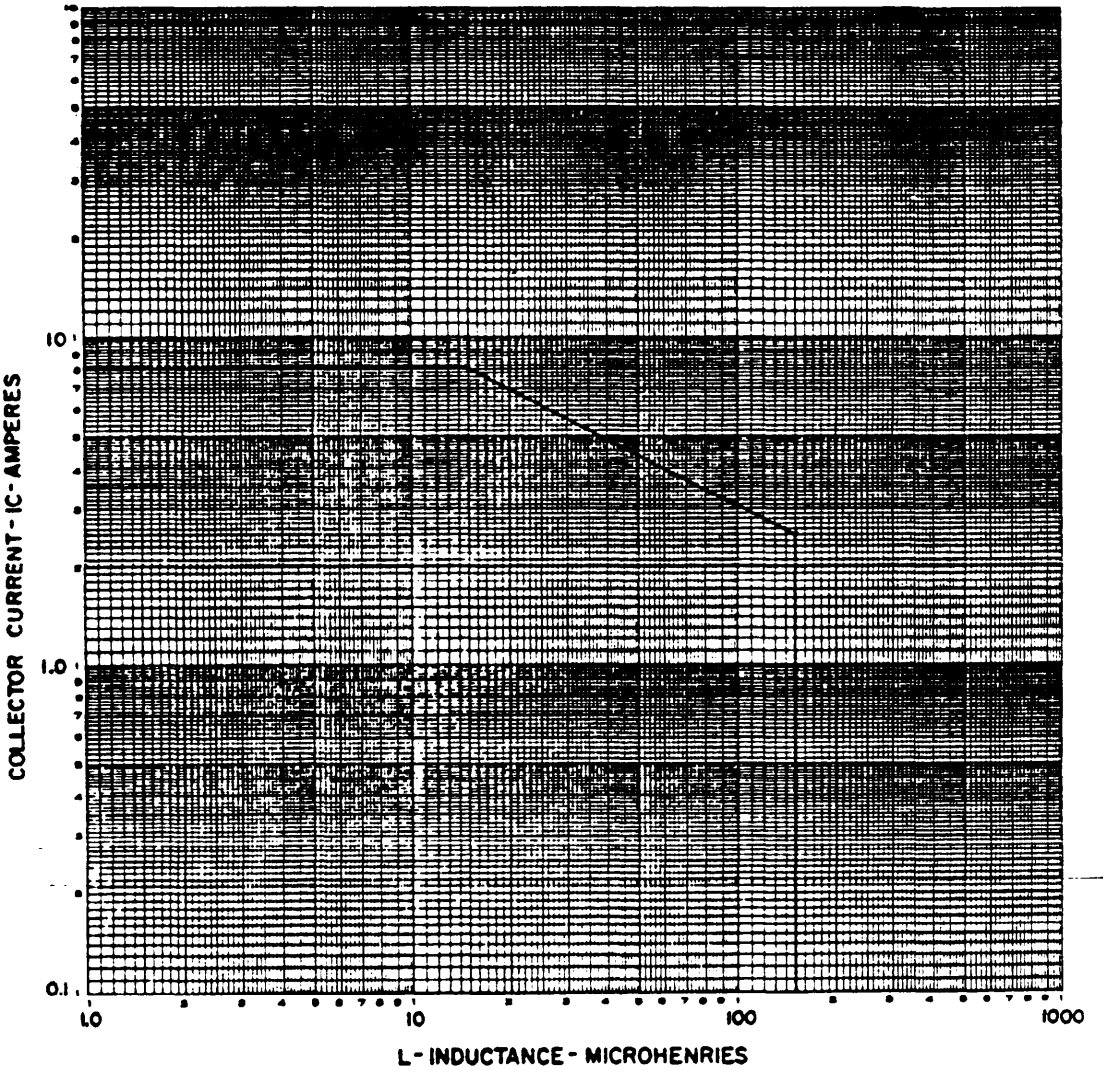

FIGURE 3b. Switching: Unclamped inductive load.

Custodian:
Air Force - 17

Review activities:
Air Force - 11, 19, 80
DSA - ES

User activities:
Air Force - 13, 15

Preparing activity:
Air Force - 17

Agent:
DSA - ES/ajf

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